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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,490	09/08/2003	E. Scott Hagermoser	59004US002	2018
32692	7590	04/12/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			MOON, SEOKYUN	
			ART UNIT	PAPER NUMBER
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DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/658,490

Applicant(s)

HAGERMOSER ET AL.

Examiner

Seokyun Moon

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. **Claim 26** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "*injection molding the airbag cover*" in claim 26 is not clearly disclosed which portion of the product is to be indicated or what type of action is to be conducted.

Therefore, the phrase "*injection molding the airbag cover*" in claim 26 will be interpreted as "*molding the airbag cover*" for further examination purpose, as best understood by the examiner.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-8 and 13-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Neuman et al. (U.S. Pat. No. 5,942,815, herein after referred to as "Neuman") in view of Reighard et al. (U.S. Pat. No. 5,423,569, herein after referred to as "Reighard").

As to **claim 1**, Neuman [fig. 7] [col. 6 lines 22-28] teaches a touch input device ("*steering wheel hub 606*") for interacting with horn subsystem (fig. 1: "*horn subsystem 116*") in a vehicle that includes an airbag ("*704*") [col. 2 lines 66-67 and col. 3 lines 1-4], comprising:

an airbag cover ("*outer cover 702*") having a surface accessible to and touchable by an occupant of the vehicle; and

a capacitive touch sensor ("*flexible capacitor 102*") [fig. 7] disposed between the airbag and the airbag cover, the touch sensor [fig. 1] configured so that a touch to a designated area ("*force area 112*") of the surface of the airbag cover allows capacitive coupling between the touch and the touch sensor through the airbag cover, the touch sensor adapted for connecting to a controller ("*signal generating circuit 104*") capable of using signals generated by the capacitive coupling to interact with horn subsystem of the vehicle [col. 2 lines 66-67 and col. 3 lines 1-5].

Neuman does not teach the capacitive touch sensor to be used to control electronic systems of the vehicle.

However, Reighard [col.2 lines 40-48] teaches a touch sensor ("*flexible pressure sensitive signaling means*") implemented in a steering wheel, to be used to control various electrical accessories such as a horn, cruise control, windshield wiper, or headlights installed in a car.

It would have been obvious to one of ordinary skill in the art at the time of the invention to teach Neuman's capacitive touch sensor to interact with various electrical systems such as a horn, cruise control, windshield wiper, or headlights , as taught by

Reighard, to allow the driver of a car to access various electronic subsystems of a car with a minimum of diversion of the driver's attention from the road [Reighard: *col. 1 lines 46-49*].

As to **claim 2**, Neuman [*col. 2 lines 54-57*] teaches the vehicle to be an automobile.

As to **claim 3**, Neuman [*fig. 6*] teaches the surface ("*outer surface 608*") of the airbag cover comprising a drawing (a horn shaped icon) marking the designated area.

Neuman does not teach a drawing to be a relief pattern.

Applicant has failed to disclose that having a relief pattern as the drawing provides an advantage, is used for a particular purpose, or solves a state problem. Therefore, having such a drawing is an obvious matter of design choice.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any pattern of drawing, including a relief pattern drawing for Neuman, since any pattern would perform equally well to indicate the device user that a device or an instrument is implemented under a surface on which a pattern is drawn [Appl. *pg. 7 lines 13-15*].

As to **claim 4**, Neuman [*col. 2 lines 54-57*] [*fig. 7*] teaches the airbag cover ("*outer cover 702*") being on a steering wheel.

As to **claims 5 and 7**, Neuman does not teach the steering wheel incorporating additional touch sensors or additional capacitive sensors being positioned between the airbag and the airbag cover.

However, the courts have been held that a mere duplication of parts for a multiplied effect is generally recognized as being within the level of ordinary skill in the art. St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement additional capacitive touch sensors between the airbag and the airbag cover in Neuman's steering wheel to provide additional access for various electrical subsystems to the driver of a vehicle.

As to **claim 6**, Neuman does not teach the airbag cover being on a passenger side of the vehicle.

However, the courts have been held that a mere change of location of parts is generally recognized as being within the level of ordinary skill in the art. In re Japikse, 86 USPQ 70 (CCPA 1950).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include an airbag on a passenger side of Neuman's vehicle to provide additional safety to the passenger of the vehicle.

As to **claim 8**, Neuman does not teach expressly the capacitive touch sensor being configured to safely blow apart upon deployment of the airbag.

However, it is inherent to teach Neuman's sensor being configured to safely blow apart upon deployment of the airbag since the airbag is to protect the driver of a vehicle and the unsafe destruction of the capacitive touch sensor implemented in a Neuman's vehicle is not consistent with the purpose of the airbag being implemented in a vehicle.

As to **claim 16**, Neuman [*col. 6 lines 2-4*] teaches the airbag cover providing a substrate for the capacitive touch sensor.

As to **claims 13-15**, Neuman does not teach expressly a substrate of a capacitive touch sensor to comprise paper, cloth, or plastic.

Applicant has failed to disclose that specifying the substrate of the capacitive touch sensor to comprise paper, cloth, or plastic provides an advantage, is used for a particular purpose, or solves a state problem. Therefore, specifying the substrate of the capacitive touch sensor to comprise paper, cloth, or plastic is an obvious matter of design choice.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any one of nonconductive materials such as paper, cloth, and plastic for the substrate of Neuman's capacitive sensor since any one of nonconductive material would perform equally well at preventing particles being transferred or leaked from the capacitive touch sensor.

As to **claims 17-22**, the combined device of Neuman and Reighard as discussed with respect to the rejection of claim 1 does not teach expressly the electrical accessories to include radio controls, an electronic display, a heads up display, a heating/cooling/blower system, a navigational system, or a hands-free phone.

However, the courts have been held that a mere duplication of parts for a multiplied effect is generally recognized as being within the level of ordinary skill in the art. St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to teach the electrical accessories of the combined device to include various electrical subsystems such as display, heating/cooling/blower system, a navigational system, radio, compact-disk player, mp3 player, and etc. being implemented in a vehicle to provide the driver of a vehicle convenient accesses for various electrical subsystems.

As to **claim 23**, Neuman [*fig. 7*] teaches a method of making a touch-enabled airbag cover ("*outer cover 702*"), comprising:

providing an airbag cover configured for enclosing an airbag ("*704*") in a vehicle and for providing a finished surface; and

disposing a capacitive touch sensor ("*flexible capacitor 102*") on a back surface of the airbag cover opposing the finished surface (the most top surface of the "*airbag cover 702*"), the touch sensor configured so that a touch to a designated area (*fig. 1*: "*force area 112*") of the finished surface allows capacitive coupling between the touch and the touch sensor through the airbag cover, the touch sensor for connecting to a controller ("*signal generating circuit 104*") capable of using signals generated by the capacitive coupling to interact with horn subsystem of the vehicle [*col. 2 lines 66-67 and col. 3 lines 1-5*].

Neuman does not teach the capacitive touch sensor to be used to control electronic systems of the vehicle.



However, Reighard [col.2 lines 40-48] teaches a touch sensor ("*flexible pressure sensitive signaling means*") implemented in a steering wheel to be used to control a horn or other electrical accessories installed in a car.

It would have been obvious to one of ordinary skill in the art at the time of the invention to teach Neuman's capacitive touch sensor to interact with various electrical systems such as a horn, cruise control, windshield wiper, or headlights , as taught by Reighard, to allow the driver of a car to access various subsystems of a car with a minimum of diversion of the driver's attention from the road [Reighard: col. 1 lines 46-49].

As to **claim 24**, Neuman teaches the step of disposing a capacitive touch sensor ("*flexible capacitor 102*") on the back surface of the airbag cover comprises transferring conductors ("*metal surface 502*") forming the touch sensor from a decal layer ("*polyester film 506*") to the back surface of the airbag cover.

As to **claim 25**, Neuman teaches the steps of disposing a capacitive touch sensor ("*flexible capacitor 102*") on the back surface of the airbag cover ("*outer cover 702*") comprising to laminate the touch sensor to the back surface of the airbag cover.

As to **claim 26**, Neuman [fig. 7] [col. 6 lines 24-27] teaches the step of disposing a capacitive touch sensor ("*flexible capacitor 102*") on the back surface of the airbag cover ("*outer cover 702*") comprising disposing the touch sensor in a mold and molding the airbag cover using the mold so that the touch sensor is embedded in the back surface of the airbag cover.

As to **claim 27**, all of the claim limitations have already been discussed with respect to the rejection of claim 3.

As to **claim 28**, Neuman teaches a touch input device ("*steering wheel hub 606*") for interacting with horn subsystem (fig. 1: "*horn subsystem 116*") in a vehicle, comprising:

a capacitive touch sensor ("*flexible capacitor 102*") [fig. 7] disposed behind a surface in the vehicle that is accessible and touchable by an occupant in the vehicle, the touch sensor disposed in a manner such that the presence of the touch sensor maintains the look, feel, and functionality of the surface as if the touch sensor was excluded,

wherein the touch sensor ("*flexible capacitor 102*") [col. 2 lines 66-67 and col. 3 lines 1-5] is configured so that a touch to a designated area ("*force area 112*") of the surface allows capacitive coupling between the touch and the touch sensor thorough the surface, the touch sensor being adapted for connecting to a controller ("*signal generating circuit 104*") capable of using signals generated by the capacitive coupling to interact with horn subsystem of the vehicle [fig. 1].

Neuman does not teach the capacitive touch sensor to be used to control electronic systems of the vehicle.

However, Reighard [col.2 lines 40-48] teaches a touch sensor ("*flexible pressure sensitive signaling means*") implemented in a steering wheel to be used to control a horn or other electrical accessories installed in a car.

It would have been obvious to one of ordinary skill in the art at the time of the invention to teach Neuman's capacitive touch sensor to interact with various electrical systems such as a horn, cruise control, windshield wiper, or headlights , as taught by Reighard, to allow the driver of a car to access various subsystems of a car with a minimum of diversion of the driver's attention from the road [Reighard: *col. 1 lines 46-49*].

As to **claim 29**, Neuman [*col. 2 lines 54-57*] teaches the surface being a surface of a steering wheel.

As to **claims 30-34**, Neuman does not teach the surface being a surface of a dashboard, a visor, a center console, an arm rest, or a seat cover.

However, the courts have been held that a mere change of location of parts is generally recognized as being within the level of ordinary skill in the art. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include Neuman's touch input device in any surface of the interior of the vehicle to provide convenient accesses to the driver and passengers of a vehicle for various electrical subsystems such as audio, compact-disk player, radio control, and etc being implemented in the vehicle.

As to **claim 35**, all of the claim limitations have already been discussed with respect to the rejection of claim 3.

Art Unit: 2675

3. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Neuman and Reighard as applied to claim 1 above, and further in view of Seely et al. (U.S. Pat. No. 6,188,391 B1, herein after referred to as "Seely").

Neuman does not teach the capacitive touch sensor being an x-y sensor.

However, Seely [*fig. 8A and Fig. 8B*] teaches an x-y sensor ("*capacitive touchpad*") being used to control a cursor in the display of the computer.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include Seely's capacitive touch pad in Neuman to allow the user to manipulate a graphic cursor on a display device of a vehicle [*col. 1 lines 13-15*].

4. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Neuman and Reighard as applied to claim 1 above, and further in view of Pepper, Jr. (U.S. Pat. No. 4,755,634, herein after referred to as "Pepper").

Neuman does not teach the capacitive touch sensor being a quadrant segmented sensor.

However, Pepper [*fig. 1*] teaches a quadrant segmented sensor ("*an array of four conductive quadrant electrodes*").

It would have been obvious to one of ordinary skill in the art at the time of the invention to include Pepper's quadrant segmented sensor in Neuman to reduce the size of the touch panel occupied by the sensors [*col. 1 lines 45-48*].

5. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Neuman in view of Reighard as applied to claim 1 above, and what was well known in the art, as exemplified by Holehan (U.S. Pat. No. 6,043,809, herein after referred to as "Holehan").

The combined device of Neuman and Reighard as discussed with respect to the rejection of claim 1, does not teach the capacitive touch sensor to be a scroll bar sensor.

However, examiner takes official notice that utilizing a scroll bar sensor to provide scrolling function in an electronic display is an old and well known art as disclosed by Holehan.

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to teach the flexible capacitive sensor of the combined device of Neuman and Reighard to control a scrolling bar when multiple items or a list are to be shown on an electronic display having limited space and thus it is not possible to show all items or a whole list in a display.

6. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Neuman and Reighard as applied to claim 1 above, and further in view of Tagg et al. (PCT Pub. No. 96/15464 A1, herein after referred to as "Tagg").

Neuman does not teach the capacitive touch sensor comprising at least one discrete button.

However, Tagg [*fig. 3*] teaches a capacitive touch sensor ("*capacitive touch detector*") comprising a discrete button ("*sensor pad*").

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace Neuman's capacitive touch sensor with Tagg's capacitive touch detector to reduce the effect of noise and thus to improve selectivity [*abstract*].

**Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2006/01/27  
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SUPERVISORY PATENT EXAMINER